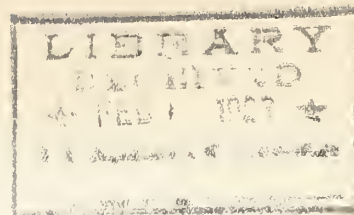


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THE EXTENSION HORTICULTURIST

February 1, 1923.

*
* Spray rings have been organized in several of the *
* states and have been so effective in the matter of handling *
* the spray problem of the entire communities that the idea is *
* not only gaining greatly in favor in those states where the *
* work was started, but is attracting wide attention on the *
* part of workers in other states. *
*

*
* In order that the plan of organization and conduct *
* of spray rings may be available to all those in extension *
* work who desire this information, we have compiled it in the *
* form of a supplement to the "Extension Horticulturist." A *
* copy is being sent to all those on our regular mailing list *
* and a limited number of additional copies will be furnished *
* upon request. Doubtless there are county agents who need *
* this information and we will send copies upon the approval *
* of the state specialists. *
*

*
* The address of Prof. Close on "The Development in *
* Fruit Demonstration Work," given at the Boston meeting of *
* the American Society for Horticultural Science on December *
* 27, 1922, has been mimeographed and copies will be sent to *
* each extension director. You can get a copy from your *
* director. *
*

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Office of Horticultural and Pomological Investigations
and States Relations Service Cooperating,
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Washington, D. C.

Continuing the plan followed in the last few numbers of the "Extension Horticulturist," we are giving the specially prepared reports of several state workers in this issue.

Horticultural Work in Iowa.

The horticultural extension work in Iowa is divided into four lines of endeavor, Truck Crops, Small Fruits and Garden Work, Landscape Architecture, and Pomology. A staff of 6 men are employed to handle this work.

Fruit Work.

Iowa is mainly a state of farm and home orchards. In certain sections in the southern half of the state are found some scattered commercial plantings. As most of the calls for work come from the owners of farm orchards, the greater part of the fruit specialists' time is spent on the following projects:

1. Dual Orchard and Poultry Demonstrations: This project was used in 36 counties in 1922, while about 25 will be reached in 1923. The project has been used by county agents as a means of creating interest in fruit and poultry in sections where no extension work has been done.

2. Pruning Schools: One day pruning schools will be staged this spring in about 45 of the 99 counties. From best figures obtainable, only about 1/2 of the orchards sprayed have been pruned. Where possible, these schools are held in spray rings. The aim of this work is to give the individual farmer enough instruction in pruning so he can intelligently prune his own trees.

3. Spraying Demonstrations: From 15 to 25 demonstration orchards are sprayed each year by fruit specialists. It was formerly necessary for the specialist to help apply each of the sprays on these orchards, as it was necessary to secure results before anything else could be considered. With the development of the spray ring and the increased interest in the spraying of farm orchards, other methods are necessary. Permanent demonstration orchards are being developed to meet this need. Six such demonstration orchards were started last season, while more will be developed this season.

The spray ring has had rapid development in Iowa. From 1 ring in 1919, the county agents report 654 in 1922 with 3,487 members, in 75 counties. Fully 2/3 of these rings are small with only 3 to 5 members each. The remainder, however, use power outfits and have from 8 to 20 members each. About 1/3 of the farm orchards of the State are enrolled in these rings.

Other lines of work handled are planting demonstrations, fair judging, institute work and fruit shows.

H. F. Nichols.

Small Fruit and Vegetable Work in Iowa.

During the year 1922, my time has been about equally divided between vegetable gardening and work with small fruit and vineyards. The garden work

is carried on with interested farmers who raise vegetables principally for home use rather than with commercial growers. Efforts are made to show how a lot of first class vegetables can be grown with the minimum of time and effort. Later in the season storage problems are taken up and usually at the home of some interested farmer. We find that with the advent of modern heating devices few farm homes are equipped with proper storage facilities for the safe keeping of vegetables and fruit produced at home.

Work with fruit has been carried on in a great many counties, both with commercial growers as well as on the farms of people who grow only for home use. In the production of small fruit and grapes, there are only 3 counties that produce in quantities beyond that of local consumption. Our big problem, so far, has been to encourage increased production.

C. V. Holsinger.

Truck Crops Extension Work in Iowa.

During the season of 1922, time was given almost exclusively to work with Irish potatoes and to work of the Iowa State Vegetable Growers' Association. Arrangements were made for demonstrations on 101 farms in 35 counties. There was a mortality of 2 of these, leaving 99 which were completed and visited twice during the season, once in early summer and once at digging time. Neighbors were invited in and small or large groups were present in every case. It was clearly demonstrated that Early Ohio (which compose 80% of our crop) are so badly damaged in a hot year like that of 1921, that they are unfit for seed purposes and that, in such a season, early planted Rurals are also injured.

For the second year we found that certain farms in the north yielded from 20 to 80 bushels per acre on the average more than other lots, also from the north. During December careful study was made of the conditions surrounding these high producing lots. So far the indications are that they are not strains but simply well grown potatoes in good condition of vigor and health.

Indications are that more work will be demanded than can be cared for in 1923. Using the Iowa Vegetable Growers' Association and its Business Agent as a means of distribution, we are hoping to establish the use of the best seed potatoes universally in Iowa. Work of this kind would be impossible without the county agents. During 1923, we shall do considerable spraying for the control of leaf hoper and tip burn in direct connection with demonstration plots similar to those of 1922. Some attention is given also to fertilizers and to cabbage and vine crops. More work can be done in these lines than we have time and help for.

C. L. Fitch.

Landscape Architecture in Iowa.

The Extension Service in Landscape Architecture, reorganized in July 1921, with one man on full time, has recognized the importance of the local leader and is trying to extend its influence through individuals and groups, who, through their greater interest and willingness may reach directly and

continuously a larger field. The county agents are made directly responsible for the local work of leaders. The Extension Landscape Specialist is giving more and more of his time to organization problems.

County-wide organization is attempted through the development of a demonstration, or good example of landscape work, one in each township, preferably at the homes of local leaders who will present the plans and directions they are undertaking at meetings in their respective districts. Plans and directions must be simple and advanced slowly and will usually include only the lawn areas, walks, drives, and planting. The specialist will visit the site of the proposed demonstration whenever possible, and the proposed plan may be presented at that time. All literature is available through the county agent's office. The specialist may hold a meeting for the local leaders only.

Lectures have offered perhaps the best medium through which large numbers of people have been reached directly by the specialist. Especially with clubs, a lecture audience has included both town and country people, and the close contact thus established between these two groups has been helpful in other ways. Slides and charts are used. A suggesting sketch plan drawn in the course of a lecture and relating to a well known property in the vicinity, has always held attention.

Demonstration plans for one consolidated school and one complete farmstead (including planting area) for each county, have advanced rapidly. There are some 50 such projects underway. Complete plans are necessary including supervision and inspection trips. Students in landscape architecture have drafted the plans and supervised much of the work. Several county-wide and city-wide contests have been started, where cash prizes will be offered for the best developed and cared for home grounds.

H. H. Cornell.

Horticultural Extension Work in Nebraska.

Horticultural Extension work in Nebraska has been under the supervision of 2 specialists, H. O. Werner, spending most of his time on the potato problems of western Nebraska, and E. H. Hoppert giving his attention to the fruit problems of eastern and central Nebraska.

The growing and disseminating of better seed potatoes has been the means of increasing the yields and the quality of the potatoes grown in the commercial sections of central and western Nebraska. Certification of seed potatoes has been in operation in the high altitude dry land section of western Nebraska for 3 years. This year over 4,000 acres were listed for certification with Mr. Werner of which 1,500 acres passed 2 field inspections and 1 bin inspection; about 87,000 bushels of potatoes passing the grade. Growers profited to the extent of about \$95,000 since certified stock sold for 50¢ to \$1.00 per cwt. more than did table stock, or uncertified seed.

In demonstration plots in the irrigated sections of western Nebraska and in the table stock sections of central Nebraska, the previous season's certified seed showed up so well that a large per cent of this seed was used in the State to increase the yields and better the quality of Nebraska grown

potatoes. Trial plots in the south likewise gave favorable results and opened up new markets for this type of seed.

Boys' and girls' potato clubs were organized in several counties to help arouse interest in raising the quality of potatoes. A potato show and convention are held each year in western Nebraska. On July 1, Mr. Werner was absorbed by the Experiment Station so as to be able to give more of his time to the experimental work with potatoes. However, for the present he will continue to serve in his capacity of secretary of the State Potato Improvement Association and as supervisor of the inspection of certified seed.

In the south Platte territory, climatic conditions are not favorable for growing potatoes. Many farmers have been buying potatoes for home consumption. Demonstrations have been carried on in a few counties in this section to show that potatoes of good quality can be raised even in very dry years under a straw mulch.

Fruit extension work has been confined largely to the home orchard and vineyard, since commercial fruit growing is carried on by only a comparatively few growers in the Missouri River section. In the 10-year period from 1910 to 1920, 71% of the fruit trees of Nebraska have died, largely because of neglect and because Ben Davis and Gano, which are extremely susceptible to Illinois Blister Canker, were planted. In 1922, many carloads of apples were shipped into the State in spite of a very heavy crop produced by the trees still living. Therefore, the need for more farm orchards is quite evident. To encourage replacing of farm orchards, meetings, pruning demonstrations, spraying demonstrations, and orchard management demonstrations, have been held. It was felt that by demonstrating that the home orchard can be profitable this interest would be aroused. From December 1 to April 1, most of the time is given over to pruning demonstrations. The county agent arranges for these meetings and advertises them. The aim is to get a small group of interested men together and show them how to prune the various kinds of fruit trees. Spraying is explained and, if possible, demonstrated. Cooperative spraying is discussed and perhaps a "spray ring" follows.

Each year 8 or 10 orchards in 5 or 6 counties are selected in which to carry on orchard management demonstrations. These are carried for 2 years usually and established in counties where the county agent has had little or no experience with orchard work. After that new counties are selected. In these demonstrations the specific pruning and soil treatment are suggested and help is given by the specialist at the first spray, and, if possible, at subsequent sprays. The grower is to grade his fruit and advertise locally. So far no difficulty has been experienced in selling the product.

New home orchard demonstrations are established in counties where the work is needed. Varieties are suggested and a planting plan prepared. These orchards are pruned each year under supervision of the specialist and county agent and given proper cultural care. They are to serve the community as examples.

Vineyards are coming in for their share of interest and attention, demonstrations in pruning, propagation and care being given. In cooperation with the State Horticultural Society an annual summer tour and program are carried out.

E. H. Hoppert.

Fruit Work in Missouri.

Horticultural extension work in Missouri during 1922, as in the latter half of 1921, has been subdivided into 2 main divisions. Deciduous fruits were handled by H. A. Cardinell and vegetable and truck crops by E. M. Page. It was with deep regret on the part of all extension and resident workers and a host of friends throughout the State that we said goodbye to Mr. Cardinell at the close of 1922 and wished him success and happiness in his work at Michigan which will also be in the capacity of Extension Horticulturist.

Notable among the phases of work carried on by Mr. Cardinell has been his intensive campaign for the improvement of pruning practices. During 1922, pruning demonstrations were conducted in 16 counties with an attendance of 1,481 male adults. It is noticeable that a decided change has taken place from the old method of removing dead and large limbs from bearing trees to a more general adoption of the practice of light annual pruning and systematic training of young trees.

Mr. Cardinell recently adopted the plan of holding district pruning and fruit management schools of about 3 days duration each, the first day to be for county agents only and succeeding days for fruit growers with county agents assisting in the demonstration. In this way, county agents became familiar with the most recent developments in horticultural practice. The schools were well attended and considered so practical that they are still being conducted by resident and extension horticultural workers. Consistent progress has also been made in the method used and number of sprays applied annually and in the use of nitrogenous fertilizers.

Some very interesting observations were made in the nature and effect of winter injury to young apple trees. These observations were made in Holt County and are published in Research Bulletin No. 56.

Vegetable Work in Missouri.

The close of 1922, marked the first entire year with a full time extension worker on vegetable and truck crops in Missouri, the specialist having undertaken this work in May of 1921. Forty-eight counties report definite results or demonstrations conducted in one or more phases of this work for the past season. An effort has been made to concentrate on the most important problems and at the same time take care of the miscellaneous work. Five rather general projects have been followed.

1. Irish Potato Work: Demonstrations, lectures and publicity on the use of certified northern grown potato seed have resulted directly in the planting of 10,260 bushels of such seed by 1,273 farmers in 11 different counties. Growers are well pleased generally with the results and a few comparative demonstrations have shown a decided advantage for the certified seed.

Fertilizer demonstrations in 8 counties showed an average increase of 30.6 bushels of potatoes per acre from an average application of \$6.00 worth of commercial fertilizer. In view of the extreme early drouth these results are considered exceptional. In the principal potato growing district these demonstrations represented the first use of commercial fertilizer.

Rhizoctonia and common potato scab are both responsible for heavy losses and seed treatment demonstrations with corrosive sublimate have been given and the method of treating given wide publicity. Forty- one counties report work on seed treatment.

2. Sweet Potato Disease Control and Storage: A definite program for control of black rot, stem rot and other sweet potato diseases has been followed for the past year and a half. It started in the fall of 1921, with field seed selection demonstrations and was followed with storage house disinfection demonstrations, help on remodeling and building storage houses and in the spring of 1922, demonstrations in sorting, treating and bedding. In the summer of 1922, an inspection service was started for the purpose of compiling a list of persons having disease free seed which could be certified. These inspection tours have been the occasion for many valuable field and general meetings and the discussion of disease control and storage problems. Although much improvement was noted over last year, out of 140 fields inspected only 30 passed the final inspection.

3. Melons and Cantaloupes: From a standing start in the spring of 1921, it has been variously estimated that in 1922 from 75 to 90 per cent of Missouri's 1,200 acres of melons was either dusted or sprayed with insecticides. The arsenical dust mixture formula which was demonstrated to be so effective for beetle control was again sent to the 1,000 melon growers on the mailing list. A large quantity of nicotine dust has also been used for beetle and aphid control on many vegetable crops.

4. Tomatoes: Fertilizer demonstrations because of the drought have not been as convincing as in the previous year, but have again shown good gains. An average increase of 2,694 pounds per acre from 250 pounds of fertilizers was reported from demonstrations in 10 counties. Wilt resistant variety demonstrations were successful where soil was really infected, but in a few cases where this was not true have failed to show any advantage. Norton, Marvel, Columbia and a strain of the Globe, were all found to be materially resistant but in need of further selection.

6. Potato Clubs, Sweet Potato Clubs and Tomato Clubs: Club work is being carried on with each of these 3 crops specifically. A bulletin containing instructions for growing the crop and conducting the club has been prepared for potato clubs and the same is planned for the others.

Earl M. Page.

Horticultural Extension Work in South Dakota.

Having had the extension horticultural work in South Dakota only since July 1, 1922, I have but few results to report, but many plans for the future. In taking up the results for the 1922 growing season, it should be remembered that South Dakota is not a horticultural state. Furthermore, the Specialist's principal duty is that of Extension Entomologist, devoting less than one-third of his time to horticulture. A summary of the County Agents reports for the year previous to December 1, 1922, show that the following results were secured in the State.

1. Farms on which fruit trees were sprayed.....	190
2. Acres fruit trees sprayed.....	247
3. Farms on which new orchards were planted.....	126
4. Farms on which fruit trees were pruned as result of demonstrations.....	233
5. Acres of fruit trees pruned.....	253

Plans for 1923.

Boys' and Girls' Club Work: For the past several years there has been no club work along horticultural lines. At the present time, (January, 1923) garden and strawberry clubs are being organized. At this time it is impossible to estimate the number that the membership will reach. Literature has already been prepared for both of these clubs and consists of 7 monthly lessons, together with timely bulletins on the subject. This literature will be sent the first of the month, from March until September inclusive. The strawberry club work promises to be quite popular in several sections of the state. We plan to use Dunlap and Progressive in this work.

Home Orchard Work: Work along this line will consist of extending information on better methods of taking care of the home orchards that are already planted, and encouraging the planting and care of new home orchards. The usual series of early spring pruning demonstrations will be carried on in several counties which have not received this work during previous years. Spraying for scab, codling moth and the railroad worm will be demonstrated and encouraged. Spray rings will be encouraged in communities where enough fruit is grown to warrant the use of a machine. At planting time a series of demonstrations will be held on the correct planting and pruning of trees that are received from the nursery.

The Permanent Fruit Garden: The planting and maintenance of the permanent fruit garden for both town and country homes will be at all times encouraged through publicity, meetings and demonstrations. Those varieties which have proven hardy under the northwest prairie conditions will be recommended. We intend to work out a standard plan for the permanent home garden consisting of blackberries, raspberries, gooseberries, strawberries, currants, grapes, rhubarb, and asparagus.

A. L. Ford.

Vegetable Extension Work in Kansas.

As Extension Plant Pathologist, I am handling vegetable extension work, while Mr. L. C. Williams handles fruit extension work in Kansas.

My main lines of work have been in disease control. The specific problems undertaken are, (1) Seed Treatment of Irish Potatoes to Control Tuber Borne Diseases. (2) Use of Certified Seed. (3) Potato Spraying and Dusting for Control of Foliage Diseases. (4) Variety and Strain Tests on Seed From Various States. (5) Seed treatment and Hill Selection for Control of Sweet Potato Diseases. (6) The use of Resistant Varieties of Sweet Potatoes for Stem rot Control. (7) The use of Resistant Varieties for Cabbage Yellows Control. (8) The use of Resistant Varieties for Tomato Wilt Control.

The work is organized by (1) Demonstrations and demonstrational plots in counties worked in. From 3 to 5 demonstrational plots arranged with co-operators who are leaders in the community. The Extension Specialist is responsible for directions and information relating to treating, planting and harvesting plots. He assists when possible. The county agent is responsible for treating, planting and keeping records. The cooperator is responsible for labor, cultivation and records.

The potato work has been emphasized in the Káw Valley. The various projects on Irish and sweet potatoes were closely related and these projects were pushed as follows:

(1) In the spring of 1922, a potato betterment campaign was conducted in cooperation with the Union Pacific Railroad. An exhibit car containing exhibits touching practically every phase of potato production was carried. At each stop lectures and demonstrations were given covering the various phases of potato production.

(2) In the summer of 1922, a potato tour was conducted as a follow up of the train. Demonstrational plots were visited and growers discussed their work and opinions regarding the demonstrations witnessed.

(3) In the fall of 1922, a potato show was held at which the growers exhibited their products and took part in the program to tell of their experiences in 1922, and to give the results of the demonstrations they conducted.

The potato work for 1923 will be organized in the same manner as 1922. The approximate dates of the train, tour and show are:

Train - February 19-24, Tour - May 21-26, Show - November 7 to 9. We would like to have as many people from other states attend these meetings as possible. All are invited.

E. A. Stokdyk.

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A report on the work in Wisconsin and the fruit report from Kansas have been received but limited space in this number necessitates our holding them for a later issue. Next month reports from Idaho, Washington and Oregon will be given.

Attention of specialists in horticulture and pomology is again called to the desirability of bringing before the people, especially those who live on farms, the importance of having a good vegetable and small fruit garden. It is a fact that families living on farms often do not have the proper nourishment for want of fresh vegetables and fruits that could be grown on less than an acre. A little newspaper publicity just ahead of garden planting time will often have a desirable effect. Suggestions relative to specific varieties of both vegetables and small fruits for the home garden are usually appreciated.

W. R. Beattie, Extension Horticulturist.

C. P. Close, Extension Pomologist.

